



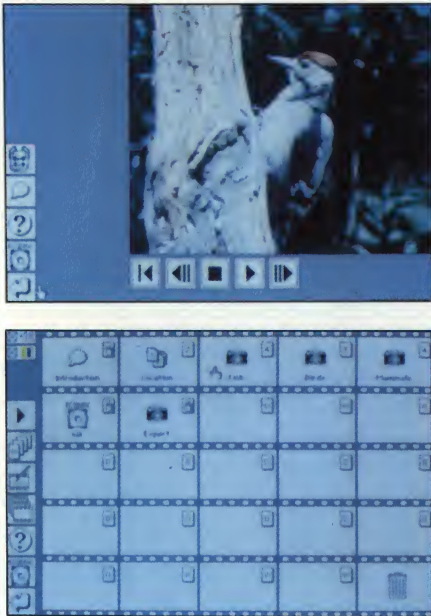
Interactive Multimedia.



What we have to learn to do, we learn by doing.

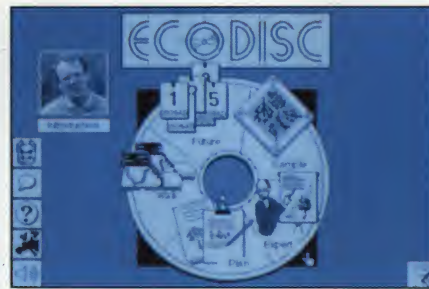
Building on Str

For more than a decade, Apple Computer has maintained a commitment to taking the mystery out of technology. We've shown millions of people that using a personal computer does not have to be an intimidating experience. In doing so, we've demonstrated that supplementing an individual's thought processes with computer solutions can increase productivity and communicate ideas more clearly.



We couldn't do this without studying what people wanted from personal computers. We listened to and talked with individuals. We discovered they wanted a tool that's easy to use. They wanted solutions that didn't require being a rocket scientist to understand them. So we did something about it.

The result – Apple Macintosh™ – the first family of personal computers to give 'ease-of-use' a whole new definition and set the standard for the rest of the industry.



Ecodisc from the BBC Interactive Television Unit is a multimedia, multilingual CD-ROM, which integrates photographic images, graphics, sound, text and data, in nine languages, to provide an interactive simulation of a nature reserve. The "Knapsack" feature of Ecodisc allows you to create your own presentation sequences, or export graphics and text to other programmes.

The Apple Macintosh is designed to remove any fears surrounding the use of computers. All software applications for the Apple Macintosh work in exactly the same way you do. The 'Desktop' presents and organises the dialogue between you and the computer by using familiar icons such as a wastepaper basket, files and folders. The 'Mouse' allows you to select and command the activities you



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want, simply and swiftly, without the need to remember or type tedious commands. To transfer information from one file or application to another, all you need to do is 'Cut' and 'Paste'. So once you've used one application, you've grasped the basics of them all.

We even made a promise that all Apple Macintosh software and hardware must be interchangeable and must run on any system available

today and introduced tomorrow. This means you can configure your system specifically to suit your current requirements, and add-on or substitute equipment as your needs change.



The Guinness™ Disc of Records 1990, utilises text, graphics, sounds, animations and photographic images to provide an interactive multimedia CD-ROM version of the best selling book.

Information can be searched, cross referenced and brought life with sound and animation, in a way that's just not possible with printed media.

For Every Action There's a Reaction

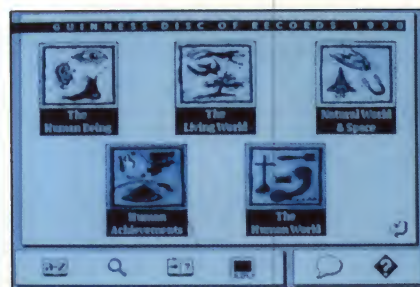
The information explosion is providing a wealth of resources to help people better communicate thoughts and ideas more effectively. A myriad of materials are available, in multiple media formats, to accomplish this task. Video, graphics, slides, books, recordings - the list goes on.

In the past, individuals could only dream about how to combine many different forms of media and store, display, and distribute them. In fact, people fantasized about all of the

imaginative ways to use different forms of media to meet the ever-growing

demands of others for accessing, analysing, and understanding vast quantities of information.

Now, Apple Computer is able to offer the solution - interactive multimedia.



The Convergence

For the first time, interactive multimedia easily brings together multiple media formats under the control of your Apple Macintosh. You can easily access and manage text, graphics, sound, animation and video in ways that let you choose the best materials for effective communication and understanding.

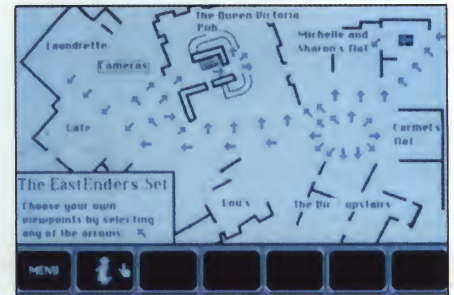
With the Apple Macintosh designed around the needs of the individual, it has always been able to handle a multiple of typefaces, graphics and sound. The graphics interface presents them in a way that is intuitive and consistent from one application to another, removing the need to learn streams of complex codes to simply perform basic tasks.

'Sculpture Interactive' from the Tate Gallery Liverpool, provides an interactive multimedia guide to 20th century British sculptors and their work. You can 'view' pieces of work from different perspectives and in different lighting conditions and review photographs, film footage and radio interviews of the sculptors themselves. The system also allows art historians and contemporary sculptors to produce customised interactive multimedia 'essays' for students and gallery visitors.

This fundamental concept extends naturally to handle additional media types such as animation and video. The consistency between applications written for the Apple Macintosh, and the ability to cut and paste data between them, also applies to multimedia information. You can easily move from one application to another and from one form of media to another, enabling you to choose the right tool for the job.

Here's an example. Let's say a teacher wants to introduce a class to

the principles of weather forecasting. Traditionally, the teacher could specify reading materials, explain concepts, and use historical data to cite previous weather occurrences to exemplify



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atmospheric events. But, what if the teacher could supplement textbooks and lectures with real-time weather information output as photographic images on screen? What if students could then take this information, analyse it, and create their own animations of weather in action based on a combination of traditional classroom exercises and multimedia information?



EastEnders GALLERY, from the BBC Interactive Television Unit, is a HyperCard™ based interactive videodisc, designed for television training and media studies teaching.

Cheltenham College is doing just this. The College has a satellite dish which receives instantaneous weather information. By translating this data into a HyperCard™ stack, the weather information can be output as photographic images on screen. Students can see weather fronts developing all over the world and can create their own animations of real weather patterns using an Apple Macintosh based animation package. They can output the information in



GALLERY simulates a three camera television gallery, using material from a recent edition of EastEnders, it allows students to cut between the cameras in the same way they would in the studio. The results can then be replayed and compared to the material which was professionally cut for transmission.

printed form, complete with photographs and text, to write reports, give presentations and develop simulations, thereby supplementing traditional ways of learning. Not only do the students understand the subject matter better, but they gain a sense of accomplishment from their efforts.

As a reference, presentation, and reporting solution, interactive multimedia on an Apple Macintosh can be used in virtually any situation that demands the construction, communication, and understanding of information ideas and concepts. Whether it's delivering a presentation, publishing a report or developing interactive learning materials, the possibilities are endless.



Getting started in interactive multimedia does not require purchasing an arsenal of equipment or abandoning existing material and working practices. Our approach lets you easily use a wealth of off-the-shelf interactive videodiscs, CD-ROMs and HyperCard stacks with your Apple Macintosh. These can be customised and supplemented to meet your special needs. Existing materials, such as CD-Audio discs and videodiscs, can be repurposed to create interactive presentation and learning materials, for such diverse disciplines as languages, music or art history. You can even create your own materials with the

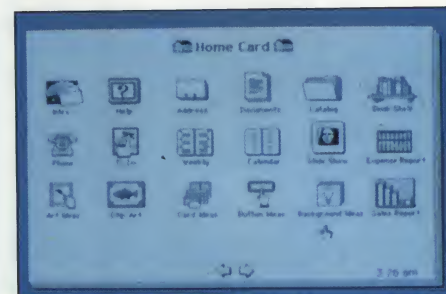
help of a number of authoring software packages. This flexible approach lets you choose the materials relevant to your objectives and those of your audience.

Here's How it Works

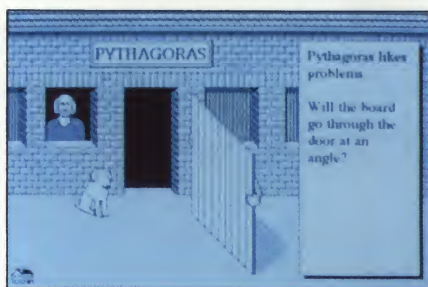
A videodisc can store full motion video, animation, images, text and sound. A CD-ROM disc can store images, sound, text and animations.

By connecting a videodisc player or a CD-ROM disc drive to your Apple Macintosh and by using HyperCard or another authoring package to categorise and link information, you can design highly textured interactive multimedia materials that stretch far beyond those produced by traditional means.

Not only can you demonstrate, through video and animated simulations,



HyperCard comes with every Apple Macintosh computer and provides a multimedia construction kit, that can be used to organise and interact with media of all types.



HyperCard's graphics and animation effects are utilised in this stack, created at Fife County Regional Educational Resources Centre to demonstrate Pythagoras' theorem.



Children now find learning to read easier, thanks to the efforts of Cheltenham and Gloucester College of Higher Education, who have created a series of 'Books that Talk' using HyperCard. By clicking on a word, the child can hear the word spoken in a child's voice.

Educators throughout the UK are using HyperCard to provide innovative and compelling teaching materials for all age groups and covering many diverse subject areas.

Leicester Polytechnic developed this stack which allows information to be easily imported into HyperCard, so that it can be 'searched' by keyword and related information can be cross-referenced.



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how an organisation will develop a European distribution policy, you can introduce students, through a combination of text, photos, and animations to the phenomenon of cell mitosis. With HyperCard you can use your Apple Macintosh to create integrated, non-linear databases that link, annotate and cross-reference multiple media formats, that people can navigate by associating information and ideas.

HyperCard: Your Creative Assistant

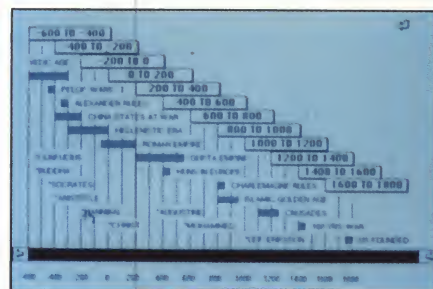
HyperCard, a multimedia software construction kit, is supplied with every Apple Macintosh and is used to organise information from a variety of media. It lets you create the links that connect facts and ideas, words and pictures, sound and movement. HyperCard lets you integrate the types of media you want - text, graphics, pictures, sound, animation or video.

HyperCard is built around a card file metaphor. Information, whether text, sound or graphics, is presented on cards which are held together in stacks. You simply link one card to another - or one idea or piece of information to another, by creating 'buttons.'

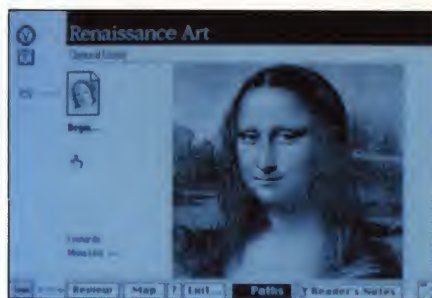
You create a series of buttons to reveal further information, play sounds, perform calculations or to take you to other stacks.

The software's English-like scripting language, HyperTalk™, allows you to perform more complex functions; you can even include routines from other programming languages.

HyperCard can also serve as a front-end to other applications in order, for example, to play an animation sequence or access a database. A number of HyperCard drivers are also available to control both videodiscs and CD-Audio discs, making it easy to incorporate slides, video, and CD quality sound into HyperCard applications.



The Timetable of Innovation™ from Xipbias, is an interactive history of scientific development and discovery featuring over 6,000 important events and their bibliographic references, which can be easily searched and cross referenced.

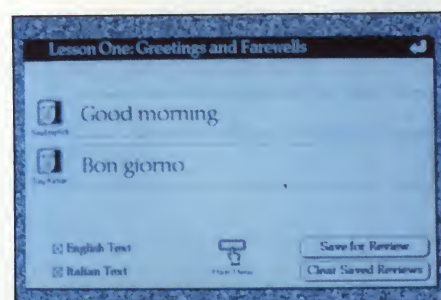


Culture™ 1.0 from Cultural Resources, is a hypermedia guide to western civilisation, which includes profiles of the humanities by both country and historical perspective, images of famous people, places and works of art, and even signature melodies of famous composers.



By now, you're probably saying, "Well it's all very good, but to create these types of quality multimedia materials requires long lead times and the resources of a computing department".

A year ago it might have but, as a company that takes pride in bringing the power of computing to the individual, Apple understands these difficulties. That's why we've been working with some very innovative software developers to create a range of interactive, easy-to-use authoring packages to help you create your own interactive multimedia materials. All you need to add is your own vision to turn ideas into reality.

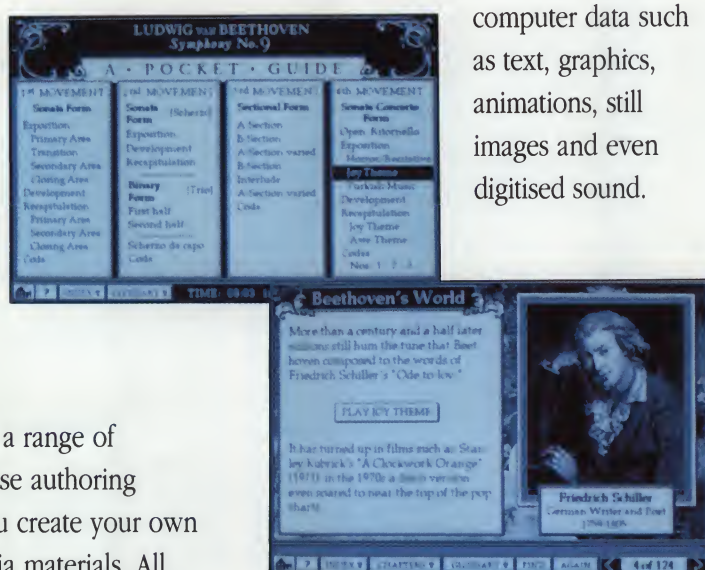


This HyperCard stack was created for use in language learning. Utilising an audio toolkit, the stack controls an Italian language audio compact disc. By simply pointing and clicking on the appropriate button, you can hear a phrase spoken in Italian or English and relate it to the words and graphics on the screen.

Integrating CD-ROM

A CD-ROM (Compact Disc, Read-Only Memory) is just like the digital audio compact disc found in music shops but with a distinct advantage. Whereas CD-Audio discs store only sound, CD-ROM discs are formatted to hold

computer data such as text, graphics, animations, still images and even digitised sound.



The CD Companion Series from The Voyager Company, combines the interactivity of HyperCard with an audio compact disc to narrate and explore important musical works. The Companion to Beethoven's Ninth Symphony examines the musician's life and times and provides a real time narration of the 68 minute work, explaining musical concepts and terms along the way.

You can also explore the inner workings of music, using examples from the CD to provide illustrations and comparisons, bringing together the traditionally separate media of books and music.

CD-ROM provides an extremely cost-effective and durable medium for storing vast amounts of information. Each disc can hold 550 megabytes of information - the equivalent of 700 floppy discs, 250,000 pages of text or 500 books. There are many CD-ROM titles available, ranging from encyclopedias and dictionaries to the Guinness™ Disc of Records.

The Apple Macintosh treats CD-ROMs just like a floppy or hard disk, thereby eliminating any need for you to learn new procedures to use them. Our own CD-ROM drive, the AppleCD SC™, can play both Apple Macintosh CD-ROMs; industry standard CD-ROMs, and regular CD-Audio titles. The drive has a standard audio jack to which headphones or speakers can be attached, and a desk accessory called CD-Remote to control and play CD-Audio discs.



Producers.

A New Purpose for CD-Audio Discs

Regular audio compact discs can become resources for HyperCard stacks with the help of a CD-Audio toolkit, which makes it easy to incorporate musical and spoken information recorded on an audio CD into your own HyperCard stacks.

You can define audio events of any duration. HyperCard buttons can be automatically created to play a specific passage

of music, for example the second bar of the recapitulation of Beethoven's Ninth Symphony, or the precise pronunciation of 'bon soir' from a French language CD. Audio toolkits come complete

with buttons that perform all the different audio functions such as play, pause, scan, etc., and sample stacks that show you how to create your own stacks for controlling CDs quickly and easily.

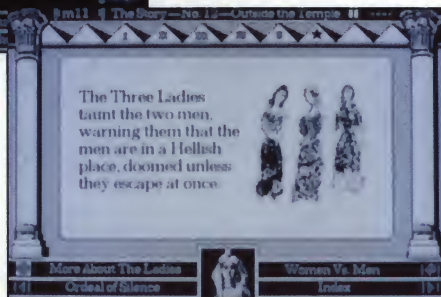
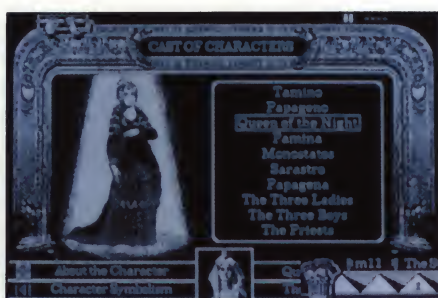
Creating Your Own CD-ROMS

Once you've experimented with CD-ROM and developed your own interactive multimedia application, you may want to share

your efforts with other people.

You can easily have your application 'pressed' onto a master CD-ROM and have copies made.

Making a master is a straightforward and inexpensive process. All you need to do is store your application or information on an Apple Macintosh hard disc (large amounts of information can be more conveniently copied to a WORM - Write Once Read Many disc drive). You then send your hard disk or WORM drive to a CD Mastering Facility which will press a master CD-ROM for you.



The Magic Flute' from Warner New Media has a HyperCard stack interacting with an audio compact disc of Mozart's famous opera. The stack narrates the opera as it plays, providing a commentary of the music and drama as well as the original German libretto and the English translation.



A CD-Audio toolkit such as the Voyager CD AudioStack, enables off-the-shelf audio compact discs to become resources for HyperCard applications. HyperCard buttons can be automatically created to play a specific sequence and the "Audio Ideas" section helps you create your own applications quickly and easily.



Integrating Video

A videodisc stores video, animation, still photos and sound in the same way as a videotape. But, unlike a videotape which must you must wind and rewind to edit, a videodisc is a random access medium. This means you can trigger it to jump instantly to various points on the disc.

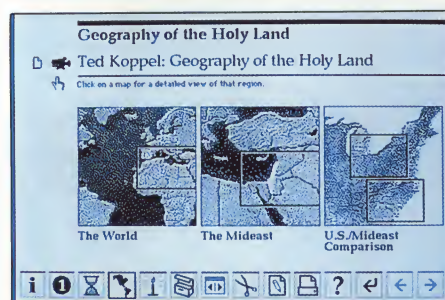
A videodisc contains analogue data and holds up to 54,000 frames of information on each side. That's 54,000 still images or 30 minutes of still

motion video or a combination of both. Discs can be either NTSC - U.S. standard or PAL - European standard. Dual standard players are available which accept both NTSC and PAL, giving you access to a wider choice of commercially available discs.

With your Apple Macintosh connected to a videodisc player and using HyperCard or other authoring

software you can sort and sequence images to play in whatever order you need. You can play sequences at various speeds, including slow motion or reverse, and pause to view images frame-by-frame. Many discs come with HyperCard stacks which catalogue the information for you on the disc.

This allows you to easily and quickly access the information you need. You



In the Holy Land, from the ABC NEWS Interactive™ series, examines the history of turmoil and conflict in the Middle East using HyperCard stacks to control videodiscs containing film and photographs of events, places and people in the region. With the application you can explore the factors influencing the current situation by reliving the experience of recent history, and you can then put together your own multimedia presentations on the subject.



Integration.

can then put together a presentation on virtually any subject. Your audience can even view the videodiscs based on their own interests or in response to your questions or prompts.

For many purposes, a dual screen system (an Apple Macintosh and video monitor) offers the ideal method of presentation. However, you may prefer to present all your information on a single screen and intergrate both Apple Macintosh and videodisc images. This technique, called video overlay, requires an Apple Macintosh II and a video overlay card.

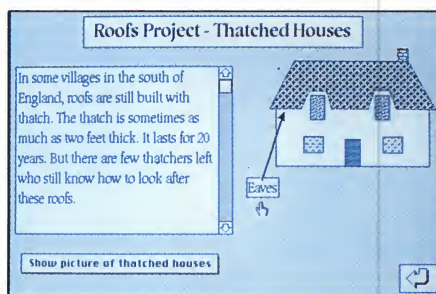
Repurposing Existing Videodiscs

Regular, off the shelf videodiscs can become video resources for your own HyperCard stacks with the help of a videodisc toolkit.

This makes it easy to develop compelling and instructional HyperCard stacks that use sound, text, video and graphics.

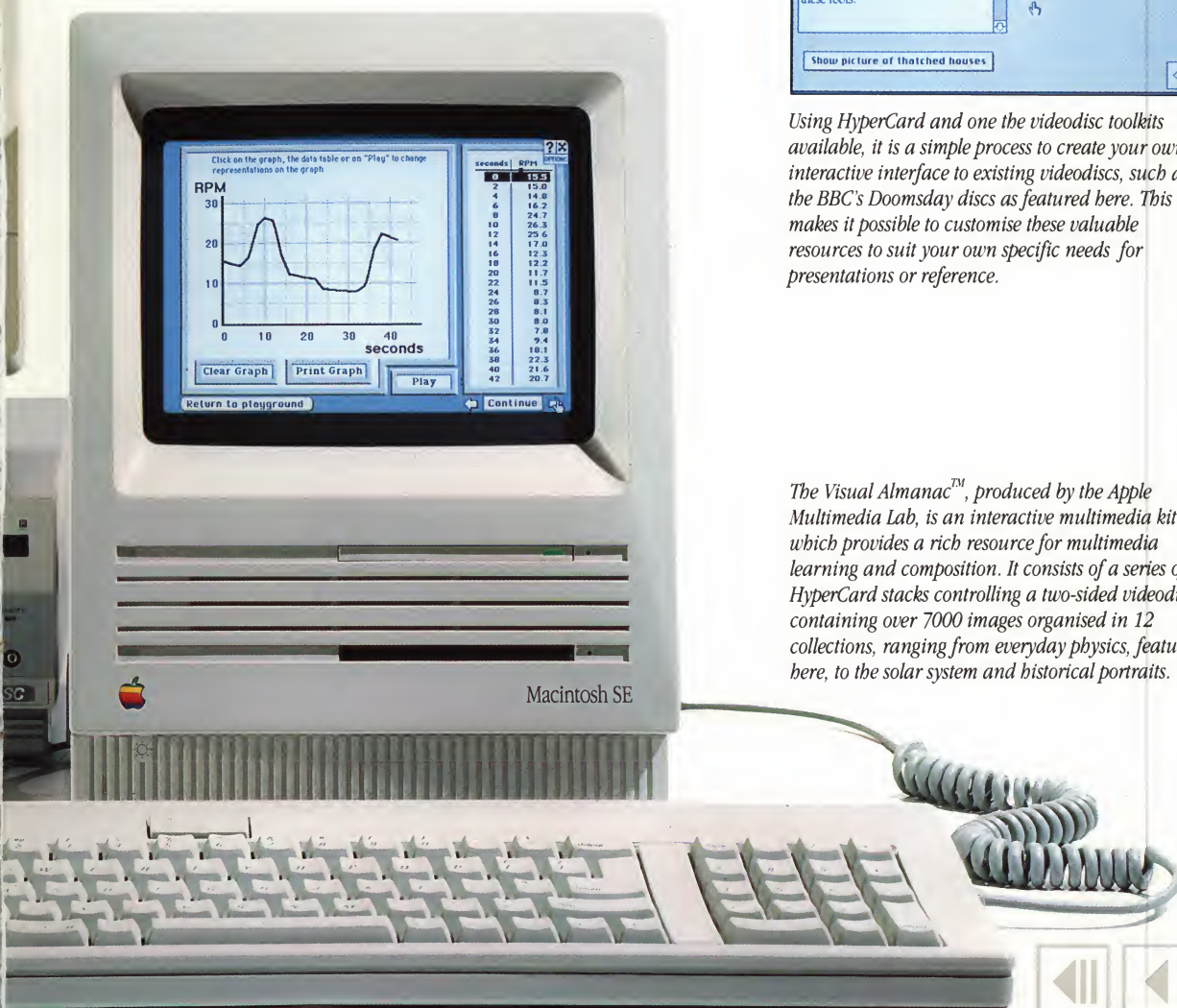
You can define video events of any duration. HyperCard buttons can be automatically created to play specific video sequences. For example, using

an English Literature disc, you can watch the balcony scene from Romeo and Juliet. Or, using a Biology disc, you can study the precise second a cell divides. Video toolkits come complete with buttons that perform all of the different video functions such as play, pause, scan, etc., and sample stacks that show you how to create your own HyperCard stacks for controlling videodiscs.



Using HyperCard and one of the videodisc toolkits available, it is a simple process to create your own interactive interface to existing videodiscs, such as the BBC's Domesday discs as featured here. This makes it possible to customise these valuable resources to suit your own specific needs for presentations or reference.

The Visual Almanac™, produced by the Apple Multimedia Lab, is an interactive multimedia kit which provides a rich resource for multimedia learning and composition. It consists of a series of HyperCard stacks controlling a two-sided videodisc containing over 7000 images organised in 12 collections, ranging from everyday physics, featured here, to the solar system and historical portraits.



Find out more about Interactive Multimedia.

There are more than 180 Apple Authorised Dealers around the country who will be happy to give you full details of our approach to interactive multimedia. Your local dealer can arrange for you to see demonstrations of interactive multimedia applications available today and show you the products available to help you create your own.

Apple Computer has published an 'Apple Guide to Multimedia Development Tools', which provides details of both software and hardware products available to assist you in the preparation and delivery of interactive multimedia materials.

All of our Dealers have had to reach the highest standard of competence before being awarded the authorised classification.

Authorised Dealers and AppleCentresSM alike have full access to service and technical support to help you gain the greatest benefits from your Apple MacintoshTM.

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